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TECH CENTER 1600/2900

THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Kara et al. : Group Art Unit: 1641

Serial No.: 09/369,992 : Examiner: J. Grun

Filed: August 6, 1999

For: DIAGNOSIS OF PARASITES

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Date

14 May 2001

B. Kroge

B. Kroge

**RESPONSE TO NOTICE TO COMPLY WITH REQUIREMENTS  
FOR PATENT APPLICATIONS CONTAINING  
NUCLEOTIDE SEQUENCE AND/OR AMINO ACID  
SEQUENCE DISCLOSURES**

Assistant Commissioner for Patents  
Washington, DC 20231

Sir:

In response to the Notice to Comply with Requirements for Patent Applications Containing Nucleotide Sequence and/or Amino Acid Sequence Disclosures (hereinafter "Notice to Comply") mailed March 29, 2001, Applicants submit herewith a replacement paper copy of the Sequence Listing as required under C.F.R. 1.821(c), and a write-protected copy of the Sequence Listing in computer readable form (on a floppy disk) as required by 37 C.F.R. 1.821(e). A copy of the Notice to Comply and a Petition for Extension of Time are also submitted herewith.

Statement under 37 C.F.R. 1.821-1.825

The undersigned hereby states that the content of the paper and computer readable copies of the Sequence Listing are the same, and that the disclosure in the Sequence Listing submitted herewith does not go beyond the disclosure of the as-filed Specification and the application from which the present application claims priority.

This Response is accompanied by a Petition for Extension of Time (one month) and a check in the amount of \$55.00 as required under 37 C.F.R. 1.17. It is believed that this submission does not necessitate the payment of any additional fees under 37 C.F.R. 1.16-1.17. If the amount submitted is incorrect, however, please deduct from Deposit Account No. 07-1969 the appropriate fee for this submission and any extension of time required.

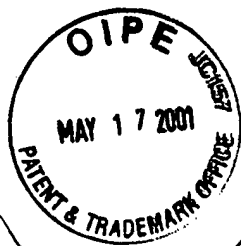
Respectfully submitted,



Donna M. Ferber  
Reg. No. 33,878

GREENLEE, WINNER AND SULLIVAN, P.C.  
5370 Manhattan Circle, Suite 201  
Boulder, CO 80303  
Telephone (303) 499-8080  
Facsimile: (303) 499-8089  
Email: [winner@greenwin.com](mailto:winner@greenwin.com)

Attorney Docket No. 64-99  
dmf: May 14, 2001



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TECH CENTER 1600/2900

SEQUENCE LISTING

<110> Kara, Anna

Ting, Robert

Tham, Jill

Nelson, James

Tan, Theresa

<120> Diagnosis of Plasmodium Infection by Analysis of Extrachromosomal Genetic Material

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<150> AU PO4953/97

<151> 1997-02-06

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aattatctgt gaagatacag atttcttata ttaggacaga aagaccctat gaagctttac	120
tattaataaaa taatgaaaat atatataattt aacatagtat aaatgggaaa caataatatt	180
atcttcttgg aaataattta gttaaaaatg aaataccatt ttattttacat ataaattctt	240
atagaaattt tataacaaat ttttaaacaa tatttatgag atagtttgac tggggcggtc	300
tcctctata tataaacaga ggagtacaat gttatattta ttatataaag atataatata	360
taattaactg taaaatttac aaattaaaca gagataaatg tcggtcttaa tgatccgata	420
attatttagt aataaaatta tcgcttaacg gataaaagtt actctaggga taacaggcta	480
atcttttccg agagtccata ttgacgaaaa ggtttggcac ctcgatgtcg gcttatcgca	540
tcctaaagca gtagtatggt ttaagggtaa gtctgttcgc ctattaaagc gatac	595

<210> 27

<211> 594

<212> DNA

<213> Plasmodium falciparum

<400> 27	
gacctgcatg aaagatgtaa cgacttaaata gctgtcttaa aaaaaatctt aatgaaataa	60
aattatctgt gaagatacag atttcttata ttaggacaga aagaccctat gaagctttac	120

tattaataaaa taatgaaaat atatataat	180
tttttcttgg aaataattta gttaaaatga aataccattt tatttatata taaattctta	240
tagaaatfff ataacaaatt ttttaacaat atttatgaga tagtttgact ggggcgggtct	300
cctcctatat ataaacggag gagtacaatg ttataatfat tatataaaga tataatatat	360
aattaactgt aaaattttaca aattaaacag agataaatgt cggctcttaat gatccgataa	420
ttatttagta ataaaattat cgcttaacgg ataaaagtta ctctagggat aacaggctaa	480
tcttttccga gagtccatat tgacgaaaag gtttggcacc tcgatgtcgg cttatcgcat	540
cctaaagcag tagtatgttt taagggttaag tctgttcgcc tattaagcg atac	594

<210> 28

<211> 595

<212> DNA

<213> Plasmodium falciparum

<400> 28	
gacctgcatg aaagatgtaa cgacttaaat gctgtotaa aaaaaatctt aatgaaataa	60
aattatctgt gaagatacag atttcttata ttaggacagg aagaccctat gaagctttac	120
tattaataaaa taatgaaaat atatataat	180
tttttcttgg aaataattta gttaaaaatg aaataccatt ttatttatat ataaattctt	240
atagaaatfff tataacaaat ttttaacaa tatttatgag atagtttgac tggggcgggtc	300
tcctcctata tataaacgga ggagtacaat gttatattta ttatataaag atataatata	360
taattaactg taaaattttac aaattaaaca gagataaatg tcggctctta tgatccgata	420
attatttagt aataaaatta tcgcttaacg gataaaagtt actctaggga taacaggcta	480
atcttttccg agagtccata ttgacgaaaa ggttggcac ctgatgtcg gcttatcgca	540
tcctaaagca gtagtatgtt ttaagggtta gtctgttcgc ctattaaagc gatac	595

<210> 29

<211> 594

<212> DNA

<213> Plasmodium vivax

<400> 29

gacctgcatg aaagatgtaa cgacttaa	gctgtcttaa aaaaaatctt aatgaaataa	60
aattatctgt gaagatgcag atttcttata	ttaggcacaga aagaccctat gaagctttac	120
tatgaataga tattgaaaat atatatatag	agcatagcat aaatgggaaa taatgatatt	180
atTTTTTTgg aaatagtgtg attgtaaatg	aaataccatt ttttatatat ataaattctt	240
aaaaaaatTT ttttaacaaat tttttaacag	tatttataag atagtttgac tggggcggtc	300
tcctcctata taaaaacgga ggagtacaaa	gttatatatg ttatataaag atatatatat	360
aattaactgt aaaattaaca aattaacag	agattaatgt cggctctaat gatccgataa	420
ttatttaatg ataaaattat cgcttaacgg	ataaaagtta ctctagggat aacaggctaa	480
tcttttccga gagtccatat tgacgaaaag	gtttggcacc tcgatgtcgg cttatcgcat	540
cctaaagcag tagtatgttt taagggtaa	gtctgttcgcc tattaaagcg atac	594

<210> 30

<211> 594

<212> DNA

<213> Plasmodium vivax

<400> 30

gacctgcatg aaagatgtaa cgacttaa	gctgtcttaa aaaaaatctt aatgaaataa	60
aattatctgt gaagatgcag atttcttata	ttaggcacaga aagaccctat gaagctttac	120
tatgaataga tattgaaaat atatatatag	agcatagcat aaatgggaaa taatgatatt	180
atTTTTTTgg aaatagtgtg attgtaaatg	aaataccatt ttttatatat ataaattctt	240
aaaaaaatTT ttttaacaaat tttttaacag	tatttataag atagtttgac tggggcggtc	300

tcctcctata taaaaacgga ggagtacaaa gttatatatg ttatataaag atatatatat	360
aattaactgt aaaattcaca aattacacag agattaatgt cgggtcttaat gatccgataa	420
ttattttaatg ataaaattat cgcttaacgg ataaaagtta ctgtagggat aacaggctaa	480
tcttttccga gagtccatat tgacgaaaag gttcggcacc tcgatgtcgg cttatcgcat	540
cctaaagcag tagtatgttt taagggttaag tctgttcgcc tattaagcg atac	594

<210> 31

<211> 596

<212> DNA

<213> Plasmodium vivax

<400> 31	
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aattatctgt gaagatacag atttcttata ttaggacaga aagaccctat gaagctttac	120
tattaataaa taatgaaaat atatataatt aacatagtat aaatgggaaa caataatatt	180
atctttcttg aaataattta gttaaaaatg aaataccatt ttatttatat ataaattcct	240
atagaaattt tataacaaat ttttaacaa tatttatgag atagtttgac tggggcggtc	300
tcctcctata tataaacgga ggagtacaa gttatatatta ttatataaag atataatata	360
taattaactg taaaatttac aaattaaaca gagataaatg tcgggtctta tgatccgata	420
attatttagt aataaaatta tcgottaacg gataaaagtt actctaggga taacaggcta	480
atcttttccg agagtccata ttgacgaaaa ggtttggcac ctgatgtcg gcttatcgca	540
tcctaaagca gtagtatgtt ttaagggtta gtctgttacg cctattaaag cgatac	596

<210> 32

<211> 596

<212> DNA

<213> Plasmodium vivax

<400> 32  
gacctgcatg aaagatgtaa cgacttaaat gctgtcttaa aaaaaatctt aatgaaataa 60  
aattatctgt gaagatacag atttcttata ttaggcacaga aagaccctat gaagctttac 120  
tattaataaa taatgaaaat atatataatt aacatagtat aaatgggaaa caataatatt 180  
atcttcttgg aaataattta gttaaaaatg aaataccatt ttatttatat ataaattctt 240  
atagaaatct tataacaaat ttttaaacaa tatttatgag atagtttgac tggggcggtc 300  
tcctcctata tataaacgga ggagtacaat gttatattta ttatataaag atataatata 360  
taattaactg taaaatttac aaattaaaca gagataaatg tcggtcttaa tgatccgata 420  
attatctagt aataaaatta tcgcttaacg gataaaagtt actctaggga taacaggcta 480  
atcttttccg agagtcata ttgacgaaaa ggtttggcac ctcatgtcgc gcttatcgca 540  
tcctaaagca gtagtatgtt ttaagggtaa gtctgtttcg cctattaaag cgatac 596

<210> 33

<211> 594

<212> DNA

<213> Plasmodium vivax

<400> 33  
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aattatctgt gaagatgcag atttcttata ttaggcacaga aagaccctat gaagctttac 120  
tatgaataga tattgaaaat atatataatg agcatagcat aaatgggaaa taatgatatt 180  
atcttttttg aaatagtgtg attgtaaatg aaataccatt ttttatatat ataaattctt 240  
aaaaaaatct ttttaacaaat tttttaacag tatttataag atagtttgac tggggcggtc 300  
tcctcctata taaaaacgga ggagtacaaa gttatatatg ttatataaag atatataat 360  
aattaactgt aaaattaaca aattaacag agattaatgt cggctcttaat gatccgataa 420  
ttatttaatg ataaaattat cgcttaacgg ataaaagtta ctctagggat aacaggctaa 480  
tcttttccga gagtccatat tgacgaaaag gtttggcacc tcgatgtcgc cttatcgcat 540

cctaaagcag tagtatgttt taagggttaag tctgttcgcc tattaagcg atac 594

<210> 34

<211> 594

<212> DNA

<213> Plasmodium vivax

<400> 34

gacctgcatg aaagatgtaa cgacttaa at gctgtcttaa aaaaaatctt aatgaaataa	60
aattacctgt gaagatgcag atttcttata ttaggcacaga aagacctat gaagctttac	120
tatgaataga tattgaaa at atatatatag agcatagcat aaatgggaaa taatgatatt	180
atTTTTTggg aaatagtgt attgtaaatg aaataccatt ttttatatat ataaatcctt	240
aaaaaaatTT ttttaacaa at tttttaacag tatttataag atagtttgac tggggcggtc	300
tcctcttata taaaaacgga ggagtacaaa gttatatatg ttatataaag atatatatat	360
aattaactgt aaaattgaca aattaaacag agattaatgt cggctctaat gatccgataa	420
ttattttaatg ataaaattat cgcttaacgg ataaaagtta ctctaggggt aacaggctaa	480
ccttttccga gaggccatat tgacgaaaag gtttggcacc tcgatgtcgg cttatcgcat	540
cctaaagcag tagtatgttt taagggttaag tctgttcgcc tattaagcg atac	594

<210> 35

<211> 593

<212> DNA

<213> Plasmodium malariae

<400> 35

gacctgcatg aaagatgtaa cgacttaa at gctgtcttaa aaaaaatctt aatgaaataa	60
aattatctgt gaagatgcag atttcttata ttaggcacaga aagacctat gaagctttac	120
tatgaataga tattgaaa at atatatatag agcatagcat aaatgggaaa taatgatatt	180

atTTTTTTTgg aaatagtgtg attgtaaatg aaataccatt ttttatatat ataaattctt	240
aaaaaaattt ttaacaaatt ttttaacagt atttataaga tagtttgact ggggcggtct	300
cctcctatat aaaaacggag gagtacaaag ttatatatgt tatataaaga tatatatata	360
attaactgta aaattaacaa attaaacaga gattaatgtc ggtcttaatg atccgataat	420
tatttaatga taaaattatc gcttaacgga taaaagttac tctagggata acaggcta	480
cttttccgag agtccatatt gacgaaaagg tttggcacct cgatgtcggc ttatcgcac	540
ctaaagcagt agtatgtttt aagggttaagt ctgttcgcct attaaagcga tac	593

<210> 36

<211> 595

<212> DNA

<213> Plasmodium malariae

<400> 36	
gacctgcatg aaagatgtaa cgacttaa	60
aattatctgt gaagatgcag atttcttata ttaggacaga aagaccctat gaagctttac	120
tatgaataga tattgaaaat atatatatag agcatagcat aaatgggaaa taatgatatt	180
atTTTTTTTgg aaatagtgtg attgtaaatg aaataccatt ttttatatat ataaattctt	240
aaaaaaattt ttttaacaaat tttttaacag tatttataag atagtttgac tggggcggt	300
ctcctcctat ataaaaacgg aggagtacaa agttatatat gttatataaa gatatatata	360
taattaactg taaaattaac aagttaaaca gagattaatg tcggtcttaa tgatccgata	420
attatttaat gataaaatta tcgcttaacg gataaaagtt actctaggga taacaggcta	480
atcttttccg agagtccata ttgacgaaaa ggtttggcac ctcgatgtcg gcttatcgca	540
tcctaaagca gtagtatgtt ttaagggtaa gtctgttcgc ctattaaagc gatac	595

<210> 37

<211> 594

<212> DNA

<213> Plasmodium ovale

<400> 37

gacctgcatg aaagatgtaa cgacttaaat gctgtcttaa aaaaaatctt aatgaaataa	60
aattatctgt gaagatgcag atttcttata ttaggacaga aagaccctat gaagctttac	120
tatgaataga tattgaaaat atatatatag agcatagcat aaatgggaaa taatgatatt	180
atTTTTTTgg aaatagtgtg attgtaaatg aaataccatt ttttatatat ataaattctt	240
aaaaaaatTT ttttaacaaat tttttaacag tatttataag atagtttgac tggggcggtc	300
tcctcctata taaaaacgga ggagtacaaa gttatatatg ttatataaag atatatatat	360
aattaactgt aaaattaaca aattaacag agattaatgt cggctcttaat gatccgataa	420
ttattttaatg ataaaaattat cgcttaacgg ataaaagtta ctctagggat aacaggctaa	480
tcttttccga gagtccatat tgacgaaaag gtttggcacc tcgatgtcgg cttatcgcat	540
cctaaagcag tagtatgttt taagggtaa gctgttcgcc tattaaagcg atac	594

<210> 38

<211> 594

<212> DNA

<213> Plasmodium ovale

<400> 38

gacctgcatg aaagatgtaa cgacttaaat gctgtcttaa aaaaaatctt aatgaaataa	60
aattatctgt gaagatgcag atttcttata ttaggacaga aagaccctat gaagctttac	120
tatgaataga tattgaaaat atatatatag agcatagcat aaatgggaaa taatgatatt	180
atTTTTTTgg aaatagtgtg attgtaaatg aaataccatt ttttatatat ataaattctt	240
aaaaaaatTT ttttaacaaat tttttaacag tatttataag atagtttgac tggggcggtc	300
tcctcctata taaaaacgga ggagtacaaa gttatatatg ttatataaag atatatatat	360



aattaactgt aaaattaaca aattaaacag agattaatgt cggctcttaat gatccgataa	420
ttattttaatg ataaaattat cgcttaacgg ataaaagtta ctctagggat aacaggctaa	480
tcttttccga gagtccatgt tgacgaaaag gtttggcacc tcgatgtcgg cttatcgcat	540
cctaaagcag tagtatgttt taagggttaag tctgttcgcc tattaaagcg atac	594

<210> 39

<211> 594

<212> DNA

<213> Plasmodium berghei

<400> 39	
gacctgcatg aaagatgtaa cgacttaaat gctgtcttaa aaaaaatott aatgaaataa	60
aattatctgt gaagatgcag atttcttata ttaggcacaga aagaccctat gaagctttac	120
tattaataga tattgaaaat atatatatat aacatagaat aaatgggaag tagtaatatt	180
atTTTTTTgg aaataatgta attgttaatg aaataccatt ttatatatat ataaattctt	240
ataaaatTTT tataacaaaa tttttaacaa tatttataag atagtttgac tggggcggtc	300
tcctcctata taaaaacgga ggtgtacaat gttatattta ttatataaag ataaatatat	360
aattaactgt aaaatttaca aattaaacag agattaatgt cggctcttaat gatccgataa	420
ttattttaata ataaaattat cgcttaacgg ataaaagtta ctctagggat aacaggctaa	480
tcttttccga gagtccatat tgacgaaaag gtttggcacc tcgatgtcgg cttatcgcat	540
cctaaggcag tagtatgttt taagggttaag tctgttcgcc tattaaagcg atac	594

<210> 40

<211> 1563

<212> DNA

<213> Plasmodium falciparum

<400> 40

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aaatagatat tcacttatta caaattgtaa ccataaaact ttaggattat actatttatg	120
gttttcattt ttatttggtta gttatggatt ttattatca gtaatactac gtactgaatt	180
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tacaattcac ggaataatta tgattttttt caatataatg ccaggattat toggaggatt	300
tggttaattac ttctaccta ttttatgtgg atctccagaa ttagcatatc ctagaattaa	360
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agaatttggg ggtggaactg gatggacttt atatccacca ttaagtacat ctttaatgtc	480
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aacactaccg gttttaactg gaggagtatt aatgttatta tcagacttac attttaatac	720
tttatttttt gaccaacat ttgcaggaga tccaatatta tatcaacatt tattctgggt	780
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ccattttgta ctatcaattg gtgcaattat tggattattt acaactgtaa gtgcatttca	1260
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tgggtcaaca atgactttat ttggtttact aatttttaaa taatattact atttattggt	1500

tttatgaact tttactctat taatttagtt aaagcacact taataaatta cccatgtcca 1560  
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<210> 41

<211> 1563

<212> DNA

<213> Plasmodium falciparum

<400> 41

gactgtatgg atogaatatt tctcatttat atccgagcct catgttattt ttattgtttt 60  
 aaatagatat tcacttatta caaattgtaa ccataaaact ttaggattat actatttatg 120  
 gttttcattt ttatttggtta gttatggatt tttattatca gtaatactac gtactgaatt 180  
 atattcttca tctttaagaa taattgcaca agaaaatgta aatctatata atatgatatt 240  
 tacaattcac ggaataatta tgattttttt caatataatg ccaggattat tcggaggatt 300  
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 agaatttggg ggtggaactg gatggacttt atatccacca ttaagtacat ctttaatgtc 480  
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agataatttc tttggtaaaa acttacgtga aaattctatt gtaatactat ggtcaatggt	1320
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tgggtcaaca atgacttht tttggtthtact aatthtttaaa taatattact atttattggt	1500
thttatgaact thtactctat taatttagtt aaagcacact taataaatta cccatgtcca	1560
tta	1563

<210> 42

<211> 1584

<212> DNA

<213> Plasmodium vivax

<400> 42

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ttatatthttt thtttgttht caatagatat acacttatta caaattgcaa tcataaaaact	120
ttaggtctat actatthtatg gthttcattt thatttggtta gttatggtht thtattatct	180
gthattthtac gtacagaatt atattcttct tctthtaagaa taattgcaca agaaaatggt	240
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ccaggattat ttggaggatt cggtaattac thcctaccaa thttatgtgg thtctccagaa	360
cttgcatatc caagaattaa tagtatatct thattattac aaccaatagc thttatatta	420
gtcatttht ctacagcagc agaatttgga ggaggtactg gatggactth atatccacca	480
ttaagtacat cacttatgtc thtatctct gttgcagtag atgttatcat tgttggtctt	540
ttagtatctg gtattgctag tattatgtct tctthtaaat thattactac tgtaatgcat	600
ctaagatcta aaggthtaac acttggtata ttaagtgtat ctacatggtc attaataatt	660

acatctgtaa tgctattatt aacattacct gttttaacag gtggtgtttt aatgttatta	720
tcagatttac attttaatac attatTTTT gatcctacat ttgctggaga tcctatttta	780
tatcaacatc tattttgggt ttttggacat cctgaagtgt atattttaat attaccagca	840
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ggtggtacta caggagtaat attaggtaat gcagctattg atattgcatt acatgatact	1200
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tggaatatga tttgttcaat tggatcaaca atgactttat ttggtttatt tattttaaaa	1500
taatataaaa tattttttgt ttatatgaat tattattcta ttaatttagc aaaagcacat	1560
ttattaaatt acccatgtcc atta	1584

<210> 43

<211> 1582

<212> DNA

<213> Plasmodium vivax

<400> 43

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aggattatth ggaggattcg gtaattactt cctaccaatt ttatgtgggt cccagaact	360
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<211> 1583

<212> DNA

<213> Plasmodium vivax

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<211> 1582

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<211> 1581

<212> DNA

<213> Plasmodium ovale

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gcatatccaa gaattaatag tatatctTTa ttattacaac caatagctt tatattagtc	420
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<210> 47

<211> 1417

<212> DNA

<213> Plasmodium malariae

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<210> 49

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<213> ARTIFICIAL: OLIGONUCLEOTIDE USEFUL AS A PRIMER

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18

<210> 50

<211> 19

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<210> 51

<211> 19

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19

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<210> 52

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*El  
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<211> 17

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<400> 53


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17

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**NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING  
NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES**

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):

- 
- ☐ 1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to these regulations.
- ☐ 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c).
- ☐ 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e).
- ☒ 4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing."
- ☐ 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must be submitted as required by 37 C.F.R. 1.825(d).
- ☐ 6. The paper copy of the "Sequence Listing" is not the same as the computer readable form of the "Sequence Listing" as required by 37 C.F.R. 1.821(e).
- ☐ 7. Other: \_\_\_\_\_

**Applicant Must Provide:**

- ☒ An initial or substitute computer readable form (CRF) copy of the "Sequence Listing".
- ☒ An initial or substitute paper copy of the "Sequence Listing", as well as an amendment directing its entry into the specification.
- ☒ A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(e) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d).

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